Appointment

From: Verhalen, Frances [verhalen.frances@epa.gov]
Sent: 6/18/2020 5:25:58 PM
To: Verhalen, Frances [verhalen.frances@epa.gov]; Casso, Ruben [Casso.Ruben@epa.gov]; Diem, Art [Diem.Art@epa.gov]; Imhoff, Robert [imhoff.robert@epa.gov]; Shappley, Ned [Shappley.Ned@epa.gov]; Smith, Darcie [Smith.Darcie@epa.gov]; Palma, Ted [Palma.Ted@epa.gov]
CC: Feldman, Michael [Feldman.Michael@epa.gov]; Leathers, James [Leathers.James@epa.gov]

Subject: Denka modeling discussion
Attachments: Comparison of Modeled and Observed 2016-18.pptx; Denka Network Assessment.pptx
Location: Microsoft Teams Meeting

Start: 6/23/2020 4:00:00 PM
End: 6/23/2020 5:00:00 PM
Show Time As: Tentative

Required Attendees: Casso, Ruben; Diem, Art; Imhoff, Robert; Shappley, Ned; Smith, Darcie; Palma, Ted
Optional Attendees: Feldman, Michael; Leathers, James

Discuss what modeling information from available analytical and meteorological data are available and if they can be used to support OAQPS needs.

FROM Bob Imhoff
I've attached a couple of additional presentations that may help address the representativeness of the SPOD monitoring relative to the Community monitoring.

- Denka Network Assessment.pptx looks at the community monitoring site locations' suitability as SPOD sampling locations
  - Angles to sources
  - Relative concentrations
  - Location map with modeled isopleths
  - Sites ranked by their likelihood of detecting events and for their ability to distinguish individual sources
- Comparison of Modeled and Observed 2016-18 shows statistical analysis of the observed and modeled concentration frequency distributions and performs a rough mass balance estimate for the relative emission rates from known routine emissions, unknown routine emissions, and episodic emissions.
  - The statistical analysis finds that about 2/3 of the dose after the installation of the RTO comes from 10% of the days (a perfect SPOD system could capture most of the dose with much less sampling)
  - Because of the deviation of the frequency distribution from log-normal, the analysis indicates that significant episodic emissions were detected on about 10% of the sampled days.
  - The mass balance indicates that the daily emission rate during episodic emissions is about 4X the modeled post-RTO emission rate.
  - The model vs observation analysis finds that
    - > 80% of the modeled dose occurs during the nighttime hours
    - Comparison with monitored distribution indicates that about ½ of the days have impacts from sources not included in the modeling, with 10% of the days having more than ½ of the daily maximum concentration due to unknown sources.

-Best regards,
Bob

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